AMENDMENTS TO THE CLAIMS:

Please cancel without prejudice claim 11, add claims 12 and 13 and amend claims 1, 6 and 8-10 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A hollow core multi-mode interference (MMI) device comprising:

at least two fundamental mode waveguides;

a multi-mode waveguide optically coupled to said at least two fundamental mode waveguides~~;, characterised in that the device comprises~~ and

a means for varying the ~~internal cross- sectional dimensions~~phase of light passing through at least a portion of at least one ~~or more~~ of said at least two fundamental mode waveguides, said means for varying comprising a means for linearly translating both side walls of at least a portion of one of said fundamental mode waveguides without substantial distortion.

2. (original) A device according to claim 1 wherein at least one of the fundamental mode waveguides has a substantially square cross-section.

3. (previously presented)A device according to claim 1 wherein the internal surfaces of the hollow core waveguides are coated with at least one layer of reflective material.

4. (previously presented) A device according to claim 1 wherein the device is formed in a semiconductor material.

5. (original) A device according to claim 4 wherein the device is formed in silicon.

6. (currently amended) A device according to claim 1 wherein the means for varying ~~the cross-sectional dimensions of a portion of said fundamental mode waveguide~~ comprises micro-electro-mechanical (MEMS) actuation means.

7. (previously presented) A device for routing radiation comprising at least one device according to claim 1.

8. (currently amended) A device according to claim 1 wherein the means for varying ~~the internal cross-sectional dimensions of a portion of said fundamental mode waveguide are~~is arranged such that the fundamental mode waveguide dimensions can be varied by application of an external force.

9. (currently amended) A~~n~~ hollow core optical router comprising~~;~~:

an MMI beam splitter;

at least one fundamental mode input waveguide optically coupled to ~~an~~said MMI beam splitter~~;~~;

at least two relay waveguides; ~~the MMI beam splitter also being optically coupled via two or more relay waveguides, to~~

an MMI beam recombiner having two or more fundamental mode output waveguides, said MMI beam splitter is optically coupled via said at least two relay waveguides to said MMI

beam recombiner, wherein the relay waveguides ~~comprise~~include a means for altering the relative phases between ~~the~~ at least two ~~or more~~ beams propagating though the relay waveguides such that radiation received from the fundamental mode input waveguide may be selectably routed to any one of the at least two ~~or more~~ fundamental mode output waveguides, ~~characterised in that~~wherein the means for altering the relative phases between the at least two ~~or more~~ beams comprises a means for linearly translating both side walls of at least a portion of one of said two relay waveguides without substantial distortion~~varying the cross-sectional dimensions of a portion of one or more of the relay waveguides~~.

10. (currently amended) A~~n~~ hollow core optical router comprising:

a multi-mode waveguide region;

a plurality of input/output fundamental mode waveguide;

a plurality of relay waveguides, said multi-mode waveguide region optically coupled to ~~a~~said plurality of input/output fundamental mode waveguides and to said~~a~~ plurality of relay waveguides, the router being configured to receive a beam of radiation via one of the plurality of input/output fundamental mode waveguides and, via modal dispersion in the multi-mode waveguide region, to divide the received beam into a plurality of beams that are coupled in to the relay waveguides, wherein the relay waveguides comprise a means for altering the relative phases between the plurality of beams and each relay waveguide is terminated with a reflective means such that radiation is returned to the multimode waveguide region and, dependent on the relative phases of the returned beams, routed to any one of the intput/output fundamental mode waveguides, ~~characterised in that~~wherein the means for altering the relative phases between the plurality of beams comprises a means for linearly translating both side walls of at least a portion

of one of said two relay waveguides without substantial distortion~~varying the cross-sectional dimensions of a portion of one or more of the relay waveguides~~.

11. (cancelled).

12. (new) A hollow-core MMI beam splitter device comprising:

a multimode waveguide;

a fundamental mode input waveguide optically coupled to one end of the multimode waveguide; and

N (N>=2) fundamental mode output waveguides optically coupled to the other end of the multimode waveguide, the lateral positions at which said input and output waveguides are coupled to the multimode waveguide and the length the multimode waveguide being such that radiation input to said input waveguide is divided into N portions by modal dispersion and intermodal interference in the multimode waveguide, each portion being coupled into a respective output waveguide, and wherein at least one of said output waveguides comprises means for varying the cross-sectional dimensions of a portion of that output waveguide.

13. (new) A hollow-core MMI beam combiner comprising:

a multimode waveguide;

N (N>=2) fundamental mode input waveguides optically coupled to one end of the multimode waveguide; and

a fundamental mode output waveguide optically coupled to the other end of the multimode waveguide the lateral positions at which said input and output waveguides are coupled to the multimode waveguide and the length the multimode waveguide being such that radiation input to each of said N input waveguides may be combined by modal dispersion and intermodal interference within the multimode waveguide and coupled into said output waveguide, and wherein at least one of said input waveguides comprises means for varying the cross-sectional dimensions of a portion of that input waveguide.